Remarks/Arguments

Claims 8-11 and 14-16 are pending in the application. Reconsideration and allowance is requested in view of the above changes and the following remarks.

Response to Section 112, 1st paragraph Rejection

Examiner alleges that while the specification is deemed enabling for "an immunogenic composition comprising a complex of heat shock proteins and antigenic peptides from cells infected with an intracellular bacteria, parasite or protozoa", it is not enabling for a vaccine. While applicant disagrees, and solely in an effort to advance prosecution, claims 8 and 9 have been amended to refer to a "composition for eliciting and immune response" or "composition for inducing an immune response". The revision of the term "vaccine composition" for the term "composition for eliciting an immune response" has basis in the specification as filed, for example at page 6, line 2 to page 6, line 5 which defines the vaccine composition as "an immunogenic determinant which stimulates the immune system". Claim 16, the other independent claim of the application, already refers to a "composition...for inducing an immune response".

The amendatory language is believed equivalent to the "immunogenic composition" language which Examiner indicates is enabled by the speciation. Hence, the amendment is believed to overcome the ground of rejection.

Response to Section 112, 2nd paragraph Rejection

Claim 8 has been amended to correct the error noted by Examiner. The claim language in question now reads "...stress protein and an antigenic..."

Examiner alleges that it is unclear in claim 8 what has been subjected to stress. Claim 8 has been amended to more particularly point out that the infected cell is subjected to stress.

Response to Section 102 Rejection

The examiner has maintained the previous rejection of May 27, 2004, alleging that the claims are anticipated by or in the alternative obvious over Srivastava et al. (US Patent No 6,048,530).

In the previous office action, examiner alleged that "Srivastava teaches a vaccine composition comprising an immunogenic determinant comprising one or more complexes between a shock protein and an antigenic peptide from the heat stressing of a cell infected with a bacterial, protozoal or parasitic intra-cellular pathogen (see abstract, title and claims). Srivastava teaches that a vaccine containing a stress protein peptide complex when isolated from cells infected with an intracellular pathogen and then administered to a mammal can effectively stimulate immune response against the pathogen....Srivastava teaches bacterial and protozoa...Srivastava teaches pharmaceutical carriers including aqueous composition and adjuvants...Srivastava teaches a method of producing the stress proteins including heat shock proteins and complex vaccines...The prior art teaches the claimed invention".

Applicant disagrees with this interpretation of Srivastava et al. The claimed invention relates to compositions comprised of induced stress protein – antigenic fragment complexes where the induced stress proteins have been produced following the application of stress to a cell infected with an intracellular pathogen. Srivastava does not teach the step of subjected cells which are infected with an intracellular pathogen to stress in order to induce the production of stress proteins. The complexes that result from the application of stress to a cell infected with an intracellular results in a composition different from Srivastava. The complexes are more immunogenic than that which may be constitutively expressed by the cell.

Claims 8 and 9 are amended herein to more particularly point out and define the invention to specify that the stress to which the infected cell is exposed is to be sufficient to stimulate the presence of stress proteins within the infected cell. Basis for this feature can be derived from page 7, lines 7 to 9 of the instant specification. As this feature is not present in the disclosure of Srivastava, the reference does not anticipate the claimed invention.

Examiner submits that the induction of more complexes which results from treating cells with stress provides for a higher level of immune response because there is more immunogen present in the immunogenic composition, and the results are in no way unexpected.

Applicant respectfully disagrees. The examples provided in the instant specification pay due cognizance to the matter of dose and, in particular level of the immunogenic determinant provided in the compositions of the invention. Enhanced results are not the result of more immunogen.

Page 14, lines 1 to 6 of the instant specification reads:

> The SP complexes may be used at any suitable concentration to provide the immunogenic determinant in the vaccine composition. We prefer that the amount of induced SP complex that is administered is in the range of 10-600ug, preferably 10-100ug, most preferably 25ug per kg of body weight.
>
> In order to determine the immunogenicity of the SP complexes, T cell proliferation assays may be used.

Subsequent to this, in Example 5, immunization is performed with constitutive SPs and also with TNF-induced or heat-induced bacteria. The results of Example 5 show that TNF-induced cells showed a 10 to 100 fold higher antibody titre than those immunized with constitutive SPs. This example therefore provides a "like for like" comparison of equivalent immunogenic compositions.

Thus, contrary to Examiner's assertion, the enhanced immune response demonstrated in the specification is not a mere dosage effect, and the results are unexpected.

Reconsideration and withdrawal of the Section 102 rejection is respectfully submitted.

Response to Section 103 Rejection

The claims have been rejected in the alternative under 35 USC 103 over Srivastava et al. Reconsideration is requested.

Examiner previously acknowledged that Srivastava does not teach of the step of subjecting the infected cell to stress. For the reasons stated above, the claimed compositions are qualitatively different from prior art of Srivastava. As previously urged by applicant, it would

not have been obvious for a person skilled in the art to modify the method of Srivastava by applying the step of subjecting the stressed cells to heat shock in order to increase the production of heat shock proteins.

As discussed in the specification, it is surprising that the treatment of such cells with heat or tumor necrosis factor produces stress protein complexes which are *more immunogenic* than stress protein complexes derived from non-induced cells or cells which have been stressed by other stimuli. There is no discussion, suggestion or specific teaching of this fact in Srivastava, and the result is unexpected.

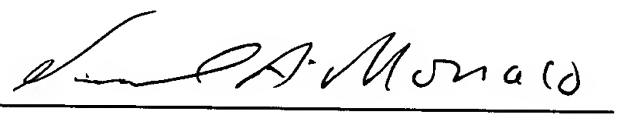
Reconsideration and withdrawal of the Section 103 rejection is respectfully submitted.

Conclusion

The claims of the application are believed in condition for allowance. An early action toward that end is earnest solicited.

Respectfully submitted

CAMILO ANTHONY LEO SELWYN COLACO

BY 

DANIEL A. MONACO
Reg. No. 30,480
DRINKER, BIDDLE & REATH, LLP.
One Logan Square
18th and Cherry Streets
Philadelphia, PA 19103-6996
(215) 988-3312
(215) 988-2757 – fax
Attorney for the Applicant